- - REMARKS - -

The IPEA Search Report and Opinion rendered by the U.S. Examiner finds all claims (1-40, inclusive) have novelty.

Applicant respectfully traverses the IPEA Search Report and Opinion to the extent that it finds an alleged lack of "inventive step" as to all claims 1-40, inclusive.

The Search Report and Opinion alleges that Claims 1-40, inclusive, lack "inventive step" as being obvious over Friedheim U.S. Pat. No. 5,471,556 in view of OHNISHI et al (U.S, Pat. No. 5,186,120) or SHINAGAWA et al (U.S. Pat. No. 5,832,177). Applicant respectfully traverses this contention. The SHINAGAWA et al device is wholly distinct and different from Applicant's invention. In SHINAGAWA et al, the system is used to obtain ordinary (not superheated) steam from a boiler in such a manner as to retain its output temperature from the boiler to and including its final destination. The temperature ranges referred to in SHINAGAWA et al are 200° - 300° F not 500°F plus as in Applicant's invention. The difference between ordinary steam and superheated steam in terms of handling and in terms of effectiveness for particular tasks is obvious and apparent.

Nowhere in the Shinagawa et al reference does there appear any reference to, or any suggestion of, the feasibility or desirability of further heating superheated steam.

All that may be found in the cited reference is heating of steam (not superheated steam) to maintain its temperature, not --as in Applicant's invention-- to increase its temperature (the Shinagawa et al steam temperature being small relative to the temperature of the superheated steam in Applicant's invention).

Clearly, the cited reference of SHINAGAWA et al cannot support a finding of obviousness when sought to be combined with Friedheim `556. In the first instance, such attempt to combine references is thoroughly a patchwork, an attempt to graft apples onto oranges, the two devices being wholly different, with different purposes, different functions, and different results. Thus, this is not only prohibited hindsight reconstruction but it is a combination which would be totally contraindicated in view of the fact that it is merely conceptual and could not support any type of functioning device or conception of a functioning device.

In the second instance, there is no suggestion, or teaching, in the references taken singly or in combination which would justify or indicate the combining of the references in this manner.

The contrast between the purposes and functions of the Applicant's invention and those of the SHINAGAWA et al, reference could not be more stark: whereas, in the Applicant's invention heating is applied to output superheated steam for the purpose of raising its temperature, in SHINAGAWA et al output steam (definitely non-superheated steam) heating is applied for the purpose of temperature stabilization, not temperature increase. Notably, the temperature relationships show that as far as the SHINAGAWA et al device is concerned the temperatures could all be equal as opposed to one temperature's being larger than the other. This is shown by the mathematical symbols which occur between the three different temperature symbols $T^t < Tp < Tm$, meaning, of course, that the temperatures could all be equal. Clearly, this is totally at variance in function and structure as well as purpose from the Applicant's invention.

The purpose of the temperature relations in the SHINAGAWA et al device, (i.e., $T^t < Tp < Tm$) is preventing "temperature reduction due to adiabatic

cooling at the orifice in the mass - flow controller and the resultant condensation of steam passing through the orifice ..." "SHINAGAWA et al, Col. 6, lines 11-14. (Emphasis added). Of course, this is wholly different from the purpose and the effect of the further heating of superheated steam following its issuance from the vaporization chamber in the Applicant's invention, which is to obtain the benefits of increased temperature - - less moisture, greater cleaning effectiveness, among others.

Accordingly, the attempt to combine the Friedheim `556 reference and the SHINAGAWA et al reference, is impermissible and doomed to failure rendering the allegation of obviousness clearly erroneous. See e.g. In re Rouffat, 149 F.3d 1350, 47 USPQ2d 1453 (Fed. Cir. 1998) ("To prevent the use of hindsight based on the invention to defeat patentability of the invention, this Court requires the Examiner to show motivation to combine the references that create the case of obviousness."); SmithKline Diagnostics, Inc. v. Helena Laboratories, Corp., 859 F.2d 878, 8 USPQ2d 1468 (Fed. Cir. 1998) ("A challenger of the validity of a patent cannot pick and choose among the individual elements of assorted prior art references to recreate the claimed invention."); see also, In re Wright, 848 F.2d 1216, 6 USPQ2d 1959 (Fed. Cir. 1988) ("Claimed subject matter was not obvious in view of prior art that suggested placing a core pin in a cylindrical vial for another purpose (increasing the visibility of the bubble)." (Emphasis added).

Regarding the OHNISHI et al reference, that reference cannot be validly combined with Friedheim `556 to render obvious Applicant's invention.

It is clear that the thrust and purpose of the device in OHNISHI et al is to stabilize and control temperature at various different stages of a process for producing solid materials for forming a thin film of high temperature superconductor, as disclosed in the quoted passages, infra.

"On the other hand, a recently discovered solid material for forming a thin film of an oxide high-temperature superconductor is hardly gasified around the room temperature, and a high temperature of at least 100° C, is required for gasifying this material. In order to employ such a solid raw material, it is necessary to prevent precipitation of the raw material gas by maintaining the gas supply system at a temperature higher than the gasification temperature. Further, it is also necessary to prevent the gas supply system from abnormal temperature rise, to thereby prevent irregular reaction of the raw material gas. Thus, the gas supply system must be controlled within a prescribed temperature range.

"However, respective components of the gas supply system are different in heat capacity from each other. If the temperatures of the components of the gas supply system are commonly controlled by a single temperature control part, therefore, large temperature differences are caused between the components. As the result, it is impossible to control the overall gas supply system within the aforementioned prescribed temperature range, and hence precipitation is caused by law temperatures or irregular reaction etc. is caused by high temperatures. Thus, it has been impossible to stably supply the gas." OHNISHI et al, col's 1 - 2, lines 56-67, 1-12.

Further, as in the case of the SHINAGAWA et al reference, the heat transfer is for purposes of stabilization and control of gas temperature, not for the purpose of increasing the temperature of superheated steam. As in the SHINAGAWA et al reference, temperatures are controlled to be as clearly stated in the OHNISHI et al reference: "According to this mixture thin film forming apparatus, the set temperatures T1, T2, T3, and T4 of the first sublimation chamber 1, the first gas deriving pipe 2, the gas mixing part 3, and the gas transport system 4 are controlled to exceed the gasification temperature of the first solid raw material A in the gas passage of the first

raw material gas, to prevent precipitation of the first raw material gas." OHNISHI et al, col. 4, lines 19-26. (Emphasis added).

In addition, as stated in OHNISHI et al: "The temperatures are controlled to be gradually increased (T1 < T2 < T3< T4) in the gas passage for the second raw material B, whereby the temperature distribution within the passages for carrying the raw material gases can be stabilized for temperature control." OHNISHI et al, Col. 4, lines 44-48. (Emphasis added).

Once again, as in the SHINAGAWA et al reference, the alleged heating need not increase temperature (witness the "smaller than or equal to" mathematical symbols) but merely need to stabilize the temperatures. Moreover, there is no analogue to the Applicant's invention element whereby a vaporization chamber produces superheated vapor, which is then heated to a greater temperature after its issuance therefrom. In OHNISHI et al, the heating is done prior to the input to a chamber 1 which causes gasification of a selected material for the purpose of the deposit of a substrate of the material in the chamber.

Accordingly, there is no suggestion or motivation in the art cited for combining OHNISHI et al with Friedheim `556, the purpose, function, and results of the OHNISHI et al device and method being wholly distinct from and unrelated to the purpose, function and results of Friedheim `556 and of the Applicant's invention. In re Wright, supra. Consequently, the allegation that the combination of Friedheim `556 and OHNISHI et al renders Applicant's invention obvious is clearly erroneous.

The independent claims being unobvious, the remaining dependent claims are unobvious as well.

On the basis of the foregoing it is respectfully submitted that the rejections of all claims should be reconsidered and withdrawn and that all claims should be allowed.

Respectfully submitted
EVANNS & WALSH

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Joseph R. Evanns, Reg. No. 25,676
Attorney for Applicant

119 N. San Vicente Blvd.
Beverly Hills, CA 90211
Telephone No.: (310) 273-0938
Fax No.: (323) 651-3027
Email: Jrevanns@concentric.net